UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,899	08/28/2003	Yoshikazu Kobayashi	00380376AA	5618

7590   06/04/2007

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ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
06/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

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	Application No.	**Applicant(s)**
Office Action Summary	10/649,899	KOBAYASHI, YOSHIKAZU
	Examiner	**Art Unit**
	Man Phan	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 August 2003</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☒ Claim(s) *7-15,19-21 and 24-29* is/are allowed.
6)☒ Claim(s) *1,5,22 and 23* is/are rejected.
7)☒ Claim(s) *2-4,6,16-18,30 and 31* is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some * c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>8/28, 11/4, 4/19, 8/17</u>.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

1.   The application of Kobayashi for a "Bridge apparatus and bridge method" filed

08/28/2003 has been examined. This application claims foreign priority based on the application

288893/2002 filed October 01, 2002 in Japan. Receipt is acknowledged of papers submitted

under 35 U.S.C 119(a) – (d), which papers have been placed of record in the file. Claims 1-31

are pending in the application.

2.   The applicant should use this period for response to thoroughly and very closely proof

read and review the whole of the application for correct correlation between reference numerals

in the textual portion of the Specification and Drawings along with any minor spelling errors,

general typographical errors, accuracy, assurance of proper use for Trademarks ^{TM}, and other

legal symbols @, where required, and clarity of meaning in the Specification, Drawings, and

specifically the claims (i.e., provide proper antecedent basis for "the" and "said" within each

claim). Minor typographical errors could render a Patent unenforceable and so the applicant is

strongly encouraged to aid in this endeavor.

Claim Rejections - 35 USC ' 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
>
> in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
>
> art are such that the subject matter as a whole would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be

negatived by the manner in which the invention was made.

4.   Claims 1, 5 and 22, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Horney, II et al. (US#5,581,558) in view of Bertagna (US#6,862,280).

        With respect to claims 1, 5, the references disclose a bridging apparatus facilitates

communication between processors across networks, according to the essential features of the

claims. Horney, II et al. (US#5,581,558) discloses in Fig. 3 a schematic flow diagram of a

bridging apparatus 200 includes at least three ports P1, P2, and P3 for transferring data between a

local area network, a wide area network and an asynchronous station, respectively, and housed

within an apparatus housing 202. Port P1 is also connected to a level converter 204 for the

transfer of data to/from the apparatus at signal levels that are correct for processing. Data are

provided from/to level converter 204 to a local area network universal synchronous/

asynchronous receiver/transmitter (USART) 206. Likewise, level converters 208, 210 adjust

signal levels of data transferred from/to ports P2 and P3, respectively. Data are transferred

to/from level converters 208, 210 to/from wide area network USART 212 and asynchronous

USART 214, respectively. Receiver controller 216 and transmitter controller 218 control the

transfer of data from/to the USARTS between a bus driver 220, an internal logic controller 222,

address logic controller 224 and a bus receiver 226. The bus driver 220, controllers 222, 224 and

bus receiver 226 control data directed data to/from the bus 228 to microprocessor 230. A set of

instructions or programs stored within a read only memory (ROM) 234 control the sequence of

commands carried out by microprocessor 230 on the apparatus' incoming/outgoing data (Col. 5,

lines 20 plus). Horney, II also provides an apparatus for establishing a data communication

system to bridge data directed from/to a first LAN-resident station to/from a second LAN-resident station across a network that is non-compatible with the first LAN-resident station. A wide area network (WAN) is an example of such a non-compatible network. The method may be initiated, for example, when the first LAN-resident station or processor generates and transmits a data packet adapting either an IEEE 802.3 broadcast address or individual PC address of a first bridging apparatus. The first bridging apparatus receives the data and arranges the data's protocol or format to ensure compatible transmission across a LAN/WAN interface into the wide area network. A second bridging apparatus receives and transforms the protocol or data format of the WAN-arranged data for transfer across a second interface (i.e., WAN/LAN) to the second local area network. The protocol of the first and second local area networks is preferably compatible. To the LAN-resident first and second stations, communication appears to take place within a single local area network shared by both (Col. 2, lines 40 plus).

However, Horney, II does not expressly disclose the step of performing priority processing for a relay of a frame from the bridging unit. In the same field of endeavor, Bertagna (US#6,862,280) teaches a method and system for Priority processing for a data communication switch, such as a LAN switch supporting source-learned bridging, in which a priority value for application to an outbound tagged packet is determined based on an inbound tag priority and a plurality of other values, such as an inbound tag VLAN and receiving port identifier. The plurality of other values may be initially resolved to a virtual trunk identifier, which virtual trunk identifier may be applied with the inbound tag priority to determine the outbound tag priority. The virtual trunk identifier may be resolved by reducing the plurality of other values to a

smaller-bit value and using the smaller-bit value in a table look-up (See Figs. 2 & 14-15; Col. 1, lines 35 plus).

It's also noted that, The Open System Interconnection (OSI) model provides structured layers to implement communications across a network. The OSI layers define standards at each level of the network: physical (layer 1), data link (layer 2), network (layer 3), transport (layer 4), session (layer 5), presentation (layer 6), and application (layer 7).

Regarding claims 22-23, they are method claims corresponding to the apparatus claims above. Therefore, claims 22-23 are analyzed and rejected as previously discussed with respect to the claims above.

One skilled in the art would have recognized the need for efficiently relay of a frame between different networks, and would have applied Bertagna's novel use of the priority processing into Horney, II's teaching of a bridging apparatus in facilitate communications between processors across networks. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Bertagna's priority remapping for data communication switch into Horney, II's apparatus for bridging non-compatible network architectures with the motivation being to provide a bridge apparatus and bridge method for the relay of a frame between networks.

Allowable Subject Matter

5.   Claims 7-15, 19-21, 24-29 are allowable

6.   Claims 2-4, 6, 16-18, 30-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7.   The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein a cache table in which session data having high priorities are preregistered; and a plurality of first FIFO queues corresponding to priorities, wherein the transmitter includes a header comparator for, upon the reception of a transmission request for the frame to be relayed from the bridging unit to the first device driver unit, searching the cache table and extracting a priority based on headers included in a second to a fourth OSI layer of the frame, and for adding the transmission request to one of the first FIFO queues in accordance with the priority that is extracted, and a synthesization unit for, in accordance with a priority for the first FIFO queue, outputting the transmission request from the first FIFO queue to the first device driver unit; wherein a first cache table, in which first session data are predesignated; a second cache table, used when a session is established; a first FIFO queue; and a second FIFO queue, wherein the middleware unit includes a first header comparator for, when a transmission request is issued for the frame to be relayed from the bridging unit to the first device, extracting second session data from headers of a second to a fourth OSI layer in the frame and, when the second session data are registered in the second cache table, adding the transmission request to the first FIFO queue; for, when the second session data are registered neither in the first cache table nor in the second cache table and the frame to be relayed is a specific, predesignated frame, registering the second session data in the second cache table and adding the transmission request to the first FIFO queue; for, when the second session data are registered in the first cache table but not in the second cache table and the frame is not a specific, predesignated frame, adding the transmission request to the second FIFO buffer; or for, when the second session data are registered neither in the first nor the second

cache tables, adding the transmission request to the second FIFO queue, and a synthesization unit for outputting to the first device driver unit, in the named order, the transmission requests in the first FIFO queue and in the second FIFO queue; and wherein a cache table in which session data are preregistered; a first FIFO queue for the transmitter; and a second FIFO queue for the receiver, wherein the transmitter includes a first header comparator for, upon the reception of a transmission request for the first frame to be relayed from the bridging unit to the first device driver unit, searching the cache table and extracting a first priority, based on headers that are included in a second to a fourth OSI layer in the first frame, and for, in accordance with the first priority, adding the transmission request for the first frame to the first FIFO queue, and a first synthesization unit for transmitting, in accordance with the first priority, the transmission request from the first FIFO queue to the first device driver unit, and wherein the receiver includes a second header comparator for, upon the reception of a bridging request for the second frame, searching the cache table and extracting a second priority, based on headers that are included in a second to a fourth OSI layer in the second frame, and, for, in accordance with the second priority, adding the bridging request for the second frame to the second FIFO queue, and a second synthesization unit for transmitting, in accordance with the second priority, the bridging request from the second FIFO queue to the bridging unit, as specifically recited in the claims.

8.   Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

The Vij et al. (US#7,095,748) show a bridging apparatus for interconnecting a wireless

PAN and a wireless LAN.

The Fiammante (US#6,081,532) show a bridging apparatus for traffic filtering in

communication networks.

The Hutchings et al. (US#6,269,252) show a programmable bridging apparatus to

connect multiple networks of different protocols.

The Shizume (US#7,197,039) show a bridge apparatus with entries reduced in filtering

database and network using the same.

The Inagaki et al. (US#7,177,310) show a network connection apparatus.

The Yoshino et al. (US#7,092,392) show a packet routing apparatus.

The Bertagna (US#6,901,452) is cited to show a selectable prioritization for data

communication switch.

The Haddock et al. (US#6,678,248) show a policy based QoS.

The Seki et al. (US#2003/0063592) show a wireless LAN access point.

The Mizoguchi et al. (US#2003/0012164) show a radio station and data packet

transmitting./receiving method.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The

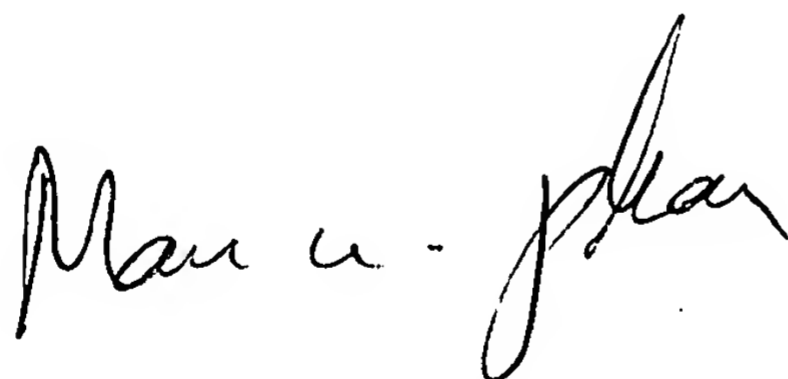examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wellington Chin, can be reached on (571) 272-3134. The fax phone number for the

organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (571) 272-2600.

11.   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status information for

unpublished applications is available through Private PAIR only. For more information about

the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to

the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-

9197.

Mphan

05/30/2007.

MAN U. PHAN
PRIMARY EXAMINER